REMARKS/ARGUMENTS

In this Amendment, claims 31, 55, 82, 83, 95, 103, 104, 113 and 114 have been canceled. Claims 1, 3, 7, 24, 25, 49, 73, 77–81, 93, 102 and 112 have been amended. Claims 1-30, 32-54, 56-81, 84-94, 96-102, 105-112 and 115-127 are now pending.

Claim Rejections – 35 USC § 102

Claims 1–2, 5, 7–12, 14, 18, 20–23, 25–26, 29, 31–36, 38, 42, 44–47, 49–50, 53, 55–60, 62, 66, 68–71, 73–74, 76–77, 79–87, 97, 93–97, 101–107, 111–118 and 122 stand rejected under 35 USC § 102(b) as being anticipated by Christopoulos et al. *(US 2001/0047517)*. Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the claims, as amended. Christopoulos fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested a rational reason to include such features.

For example, Chirstophoulos fails to teach or suggest an apparatus, operable in a wireless communication system, comprising an encode manager included within wireless service provider equipment of the wireless communication system that receives a multimedia stream and dynamically determines a current bandwidth available for the multimedia stream within the wireless communication system based on a current number and types of users using the wireless communication system, as recited by Applicant's currently amended claim 1.

Christopoulos also fails to teach or suggest the apparatus further comprising an encoder system included within the wireless service provider equipment for re-encoding the received stream using an encoding parameter set to output an encoded stream with principles set forth by the encoding parameter set, wherein the encoding parameter set is determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, as recited by Applicant's currently amended claim 1.

Instead, rather than dynamically determine a current bandwidth available for the multimedia stream, as required by Applicant's currently amended claim 1, Christopoulos is directed to a system that appears to merely determine and then maintain certain capabilities and/or characteristics of both the client and the network without further updating any capability and/or characteristic related to available bandwidth. In this respect, Christopoulos fails to ever

determine a ***current*** bandwidth available for the multimedia stream. The Christopoulos system uses its capabilities and/or characteristics to request transcoder hints by which to transcode multimedia data, instead of using a parameter set determined according to an encoding scheme based on the currently determined available bandwidth, as further required by Applicant's currently amended claim 1.

Christopoulos states explicitly that "the receipt and storage of client capabilities, user preferences, link characteristics and/or network characteristics is normally only performed during an initialization process between the client and the transcoder."[1] Christopoulos continues to explain that "After the initialization process, the transcoder can request the transcoder hints from the server based upon these stored" capabilities and/or characteristics.[2] In other words, Christopoulos teaches that a client operated by a user typically informs the transcoder of these capabilities and/or characteristics only during an initialization process. In this sense, Christopoulos appears to suggest that the transcoder determines these capabilities and/or characteristics only during an initialization process and therefore these capabilities and/or characteristics do not, in any sense, represent a ***current*** bandwidth available for the multimedia stream, as required by Applicant currently amended claim 1.

Christopoulos does however warn that, rather than or in addition to determining these capabilities and/or characteristics during an initialization process, a user can update these capabilities and/or characteristics at any time prior to the transcoder requesting multimedia data from the server.[3] In this respect, the Christopoulos transcoder may receive updates concerning the above capabilities and/or characteristics, but Applicant notes that any user input concerning these capabilities and/or characteristics would not involve the current bandwidth available for the multimedia stream, as required by Applicant's currently amended claim 1.

To illustrate, a user operating a client, more than likely, has little if any knowledge of the current bandwidth available for the multimedia stream within a wireless communication system. As a result, the user therefore cannot dynamically update these capabilities and/or characteristics to reflect the current bandwidth. Moreover, setting this logistical issue aside, Christopoulos provides no teaching directed to how a user would update the transcoder with the current bandwidth. Accordingly, Applicant submits that Christopoulos fails to teach or suggest an

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[1] ¶ [0017].
[2] *Id.*

encoder manager that dynamically determines a current bandwidth available for the multimedia stream within the wireless communication system, as required by Applicant's currently amended claim 1.

Applicant has further amended this limitation of claim 1 to clarify that the dynamic determination is based on a current number and types of users using the wireless communication system. Applicant contends once again that a user would have little if any knowledge of the current bandwidth much less current bandwidth with respect to other users or, even more specifically, the number and the types of the other users using the wireless communication system. As a result, Applicant submits, much as above, that Christopoulos fails to teach or suggest dynamically determining a current bandwidth available for the multimedia stream, let alone an encoder manager that dynamically determines a current bandwidth available for the multimedia stream within the wireless communication system based on a number and types of users using the wireless communication system, as required by Applicant's currently amended claim 1.

By failing to teach or suggest dynamically determining a current bandwidth, Christopoulos also fails to teach or suggest that the encoding parameter set is determined according to an encoding scheme based on the currently determined available bandwidth, as required by Applicant's currently amended claim 1. Christopoulos instead requests the transcoder hints from a server that stores the multimedia data based on the capabilities and/or characteristics.[4] Yet, as described above, none of the capabilities and/or characteristics describe a current bandwidth available for the multimedia stream. As a result, the Christopoulos system neither dynamically determines a current bandwidth nor determines an encoding parameter set according to an encoding scheme based on the currently determined available bandwidth, as required by Applciant's currently amended claim 1. Again, Christopoulos determines the encoding parameter set based on either capabilities / characteristics determined during initialization, which are not current, or on user input, which most likely is unrelated to available bandwidth. In either instance, Christopoulos fails to teach or suggest the invention set forth by Applicant's currently amended claim 1.

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[3] *Id.*
[4] ¶ [0035].

Applicant has amended independent claims 25, 49, 73, 80, 81, 93, 102 and 112 in a manner substantially similar to that of claim 1. As a result, Applicant submits that many, if not all, of the arguments made above with respect to claim 1 apply to these claims 25, 49, 73, 80, 81, 93, 102 and 112. Moreover, Applicant further submits that the arguments made above with respect to independent claims 1, 25, 49, 73, 80, 81, 93, 102 and 112 apply to dependent claims 2, 5, 7–12, 14, 18, 20–23, 26, 29, 31–36, 38, 42, 44–47, 50, 53, 55–60, 62, 66, 68–71, 74, 76–77, 82–87, 97, 94–97, 101, 103–107, 111, 113–118 and 122 by virtue of these claims depending from respective independent claims 1, 25, 49, 73, 80, 81, 93, 102 and 112.

In summary, Christopoulos et al. (US 2001/0047517) fails to disclose each and every limitation set forth in amended claims 1–2, 5, 7–12, 14, 18, 20–23, 25–26, 29, 31–36, 38, 42, 44–47, 49–50, 53, 55–60, 62, 66, 68–71, 73–74, 76–77, 79–87, 97, 93–97, 101–107, 111–118 and 122. For at least these reasons, the Examiner can no longer maintain the rejections of Applicant's claims 1–2, 5, 7–12, 14, 18, 20–23, 25–26, 29, 31–36, 38, 42, 44–47, 49–50, 53, 55–60, 62, 66, 68–71, 73–74, 76–77, 79–87, 97, 93–97, 101–107, 111–118 and 122 under 35 U.S.C. 102(b) as being anticipated by Christopoulos et al. Withdrawal of these rejections is requested.

Claim Rejections – 35 USC § 103

Claims 3–4, 24, 27–28, 48, 51–52, 72, 75–76, 88–90, 98–100, 108–110 and 119–121 stand rejected under 35 USC § 103(a) Christopoulos et al. (US 2001/0047517), as being unpatentable over Vetro et al. (US 2004/0203851).

Claims 6, 30, 54 and 78 stand rejected under 35 USC § 103(a) Christopoulos et al. (US 2001/0047517) as applied to claims 2, 26, 50 and 74 above, and in view of Wang et al. (US 2002/0152317).

Claims 13, 15–17, 37, 39–41, 61 and 63–65 stand rejected under 35 USC § 103(a) Christopoulos et al. (US 2001/0047517), as being unpatentable over Anand et al. (US 6,920,179).

Claims 19, 43, 67, 92 and 123 stand rejected under 35 USC § 103(a) Christopoulos et al. (US 2001/0047517) as applied to claims 13, 38, 62, 81 and 112.

Applicant respectfully traverses each of these rejections to the extent such rejections may be considered applicable to the claims as amended. For each of the above rejections, the applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide

no teaching that would have suggested a rational reason that would have led a person of ordinary skill in the art to arrive at the claimed invention.

Applicant notes initially that each of the above rejections combine the teachings of Christopoulos (discussed above) with the teaching of a different secondary reference. As described above, Christopoulos fails to teach or suggest an apparatus that both 1) dynamically determines a current bandwidth available for the multimedia stream within the wireless communication system based on a current number and types of users using the wireless communication system and 2) uses an encoding parameter set determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, as recited by Applicant's currently amended claim 1. None of the secondary references cure these deficiencies identified above with respect to Christopoulos. Each of the secondary references cited by the Examiner is addressed below.

Vetro

Vetro describes a system by which to provide environment aware services (EAS) to mobile terminal devices.[5] The Vetro system delivers this environment awareness via an environment description, which may include, for example, device capabilities, network conditions, delivery capabilities, user preferences, mobility characteristics, etc.[6] Vetro suggests that a service manager or an application service provider may utilize the environment description to adapt and delivery personalized and general services.[7] The Vetro system may periodically update the environment descriptions to accommodate, for example, new environments or new machines capable of performing a specific type of content adaption.[8] The Vetro system may include a content adaption engine that reformats, based on one or more environment descriptions, content received from an application service provider in a first format into a second format supported by a mobile device to which the content is destined.[9]

Vetro, however, does not provide any teaching, or even suggest, that the determination of available bandwidth occurs dynamically so as to determine a current bandwidth available for the multimedia stream within the wireless communication system, much less that such a dynamic

[5] ¶ [0020].
[6] *Id.*
[7] *Id.*
[8] ¶ [0065].

determination is based on a current number and types of users using the wireless communication system, as required by Applicant's currently amended claim 1. Vetro, like Christopoulos, teaches that such determinations may at best occur periodically, which in no way ensures that the bandwidth is current. Moreover, Vetro is silent with respect to determining the available bandwidth based on a number and types of users using the wireless communication system. Vetro, like Christopoulos, further fails to teach that, as a result of forgoing any discussion of determining a current available bandwidth in the manner required by Applicant's invention, the encoding parameter set is determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, also as required by Applicant's currently amended claim 1. For the above reasons, Vetro fails to cure the deficiencies noted above with respect to Chrisopoulos.

Applicant has amended independent claims 25, 49, 73, 80, 81, 93, 102 and 112 in a manner substantially similar to that of claim 1. As a result, Applicant submits that many, if not all, of the arguments made above with respect to claim 1 also apply to these claims 25, 49, 73, 80, 81, 93, 102 and 112. As claims 3–4, 24, 27–28, 48, 51–52, 72, 75–76, 88–90, 98–100, 108–110 and 119–121 depend from respective claims 1, 25, 49, 73, 80, 81, 93, 102 and 112, Applicant submits that the above arguments made with respect to the independent claims also apply to these dependent claims.

Christopoulos in view of Vetro therefore fails to disclose each and every limitation set forth in claims 3–4, 24, 27–28, 48, 51–52, 72, 75–76, 88–90, 98–100, 108–110 and 119–121. For at least these reasons, the Examiner can no longer maintain the rejections of Applicant's claims 3–4, 24, 27–28, 48, 51–52, 72, 75–76, 88–90, 98–100, 108–110 and 119–121 under 35 U.S.C. 103(a) as being unpatentable over Christopoulos in view of Vetro. Withdrawal of this rejection is requested.

Wang

Wang describes a system that is capable of simultaneously providing different encodings of the same bitstream, where each encoding may encode the same bitstream at a different rate to accommodate the bandwidth requirements of different clients.[10] Wang suggests that different

[9] ¶'s [0076] and [0079]–[0082].
[10] ¶'s [0010] and [0005].

bandwidth requirements may occur as a result of different forms of connections. For example, Wang explains that the bandwidth at the client ends can be very different, as one client may connect via a phone modem at 56 Kb/s while another client may connect via a Cable modem at a few Mb/s.[11] Thus, much like Christopoulos and Vetro above, Wang determines a general bandwidth availability, which in the case of Wang requires evaluating the type of connection, but fails to dynamically determine a current bandwidth available for the multimedia stream within the wireless communication network based on a number and type of users using the wireless communication system, as required by Applicant's currently amended claim 1. Moreover, as a result of this first deficiency, it follows that the Wang fails to teach or suggest that the encoding parameter set is determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, as recited by Applicant's currently amended claim 1.

Applicant has amended independent claims 25, 49 and 73 in a manner substantially similar to that of claim 1. As a result, Applicant submits that many, if not all, of the arguments made above with respect to claim 1 also apply to these claims 25, 49, and 73. As claims 6, 30, 54 and 78 depend from respective claims 1, 25, 49 and 73, Applicant submits that the above arguments made with respect to the independent claims also apply to these dependent claims.

Christopoulos in view of Wang therefore fails to disclose each and every limitation set forth in claims 6, 30, 54 and 78. For at least these reasons, the Examiner can no longer maintain the rejections of Applicant's claims 6, 30, 54 and 78 under 35 U.S.C. 103(a) as being unpatentable over Christopoulos in view of Wang. Withdrawal of this rejection is requested

Anand

Anand describes a system for progressively encoding a bit stream for transmission over a heterogeneous network.[12] According to Anand, a progressively encoded bit stream may be "configured so as to be decodable at any one of a series of increasing bit rates up to a maximum bit rate, depending on which of a number of corresponding portions of the progressive coded video bit stream are received by the decoder."[13] Anand suggests that the progressive transmission video techniques are highly scalable in bit rate, and thereby allow adaptability to

[11] ¶'s [00
[12] Abstract.

different bandwidth conditions over a heterogeneous network.[14] Anand provides as an example that the progressive video transmission techniques may enable recovering and sending a higher bit rate encoding over a wired portion of the heterogeneous network while recovering a lower bit rate encoding and sending this data over the bandwidth-constrained wireless link.[15]

Again, however, Anand encodes the bitstream or multimedia stream as a function of a statically defined available bandwidth, e.g., a bandwidth constrained wireless network connection, rather than a dynamically determined current bandwidth available for the multimedia stream within the wireless communication system, as recited by Applicant's currently amended claim 1. Anand therefore fails to cure the first deficiency noted above with respect to Christopoulos. It follows from this deficiency that Anand fails to teach or suggest that the encoding parameter set is determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, as recited by Applicant's currently amended claim 1. Anand therefore fails to cure the second deficiency noted above with respect to Christopoulos, as well.

Applicant has amended independent claims 25 and 49 in a manner substantially similar to that of claim 1. As a result, Applicant submits that many, if not all, of the arguments made above with respect to claim 1 also apply to these claims 25 and 49. As claims 13, 15–17, 37, 39–41, 61 and 63–65 depend from respective claims 1, 25 and 49, Applicant submits that the above arguments made with respect to the independent claims also apply to these dependent claims.

Christopoulos in view of Anand therefore fails to disclose each and every limitation set forth in claims 13, 15–17, 37, 39–41, 61 and 63–65. For at least these reasons, the Examiner can no longer maintain the rejections of Applicant's claims 13, 15–17, 37, 39–41, 61 and 63–65 under 35 U.S.C. 103(a) as being unpatentable over Christopoulos in view of Anand. Withdrawal of this rejection is requested

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Applicant submits that the arguments above with respect to independent claims 1, 25, 49, 81 and 112 also apply to dependent claims 19, 43, 67, 92 and 123, as these claims depend from respective independent claims 1, 25, 49, 81 and 112. Because no other reference was combined

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[13] Column 3, lines 13–20.
[14] Column 4, lines 60–65.

with Christopoulos and Christopoulos provides no teaching to suggest an apparatus that both 1) dynamically determines a current bandwidth available for the multimedia stream within the wireless communication system based on a current number and types of users using the wireless communication system and 2) uses an encoding parameter set determined according to an encoding scheme based on the currently determined available bandwidth within the wireless communication system, Christopoulos lacks any teaching to suggest all of the limitation set forth in claims 19, 43, 67, 92 and 123.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: December 9, 2008

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[15] Column 6, lines 2–10.